BOSTON REGION METROPOLITAN PLANNING ORGANIZATION

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Richard A. Davey
MassDOT Secretary and CEO
and MPO Chairman

Karl H. Quackenbush
Executive Director, MPO Staff

DRAFT MEMORANDUM

DATE **December 15, 2011**

TO **Boston Region Metropolitan Planning Organization**

FROM **Karl H. Quackenbush**
CTPS Executive Director

RE **Work Program for: Callahan Tunnel Construction Impact Study**

ACTION REQUIRED

Review and approval

PROPOSED MOTION

That the Boston Region Metropolitan Planning Organization, upon the recommendation of the Massachusetts Department of Transportation, vote to approve the work program for the Callahan Tunnel Construction Impact Study in the form of the draft dated December 15, 2011.

PROJECT IDENTIFICATION

Unified Planning Work Program Classification
Planning Studies

CTPS Project Number
22206

Client
Massachusetts Department of Transportation
Project Supervisor: Peter Cavicchi

CTPS Project Supervisors
Principal: Karl Quackenbush
Manager: Scott Peterson

Funding
MassDOT Contract TBD

IMPACT ON MPO WORK

The MPO staff has sufficient resources to complete this work in a capable and timely manner. By undertaking this work, the MPO staff will neither delay the completion of nor reduce the quality of other work in the UPWP.

BACKGROUND

The Callahan Tunnel, which opened in 1961, is used to carry traffic northbound out of Boston. It handles 26,000 vehicles on a typical weekday. The parallel Sumner Tunnel carries about the same amount of traffic in the opposite direction. These two tunnels are part of a series of bridges and tunnels that cross the Mystic River and connect the Boston core with East Boston and communities on the North Shore.

The Callahan Tunnel, having been in use for 50 years, needs its deck and wall to be repaired. MassDOT will conduct a study to investigate the impacts on the traffic using the Callahan Tunnel due to the construction and examine the change of transit patterns in the metro Boston area. The study area is shown in Exhibit 1 at the end of this work scope. CTPS will provide to this study the support described in this work program.

OBJECTIVES

The purpose of this project is to support MassDOT in conducting a preliminary study that will analyze the transportation impacts that would occur during the rehabilitation of the Callahan Tunnel. This preliminary study will provide MassDOT with the information necessary to engage with agency stakeholders and the public regarding plans for rehabilitating the tunnel. The objectives of the project are threefold:

1. To provide general technical assistance as needed

2. To analyze the existing travel patterns and estimate traffic conditions that would occur during the rehabilitation of the Callahan Tunnel

3. To evaluate the potential alternatives for mitigating the transportation impacts during the construction period

WORK DESCRIPTION

The work required to accomplish the study objectives will be carried out in six tasks, as described below.

Task 1 Calibrate Base-Year (2009) Model

CTPS will develop a 2009 base-year model and calibrate it using currently available highway and transit count data. The calibration will focus on the existing roadway conditions and transit ridership. The calibrated base-year model will then be utilized to develop scenarios examining the traffic and transit impacts of the rehabilitation of the Callahan Tunnel and the scenarios that could potentially mitigate the transportation impacts.

Product of Task 1

A well-calibrated base-year model

Task 2 Investigate the Impacts on Access to Logan International Airport

Since the Callahan Tunnel is the major corridor carrying vehicles from Boston Proper to East Boston and Logan Airport, CTPS will run the Logan Passenger Ground Access Model to investigate the impact on access and on the mode shares of Logan Airport–bound trips during the construction.

Product of Task 2

Tabular and graphical summaries of results from the Logan Passenger Ground Access Model

Task 3 Analyze the Impacts on Surrounding Roadways

In order to understand the impact of diverted traffic on surrounding roadways during the AM and PM peak periods on an average weekday, up to 10 locations will be examined. The levels of service and volume-to-capacity ratios at these locations during the preconstruction and construction phases will be analyzed.

Products of Task 3

- Tables displaying the traffic volumes at up to 10 locations before and during the tunnel rehabilitation
- Schematic maps showing the traffic flows before and during the tunnel rehabilitation

Task 4 Develop and Analyze Alternatives

Up to three conceptual alternatives for alleviating the traffic congestion caused by the rehabilitation of Callahan Tunnel will be developed and analyzed in consultation with the client. The analysis will include examining the impacts of each alternative on mode share and transit use during the construction. These conceptual alternatives will serve as a starting point for the process of developing a plan for construction phase mitigation; developing it will be an open public and stakeholder process.

Products of Task 4

- The three proposed potential alternatives
- The traffic patterns and other effects anticipated under the proposed potential alternatives

Task 5 Coordinate with Project Team and Provide Ongoing Technical Assistance

CTPS will work with the project team for up to three months from the start date of this project. The work will consist of attending internal meetings as well as meetings with stakeholders. CTPS will fulfill any requests from the project team for data that are readily available and will coordinate with the client regarding what information should be distributed to interested parties.

Product of Task 5

Coordination with the project team, attendance at meetings, data provided to the project team, and memos and presentations as needed

Task 6 Produce Technical Memorandum

CTPS will prepare a technical memorandum documenting the work done and comparing traffic conditions and transit use under the proposed alternatives with existing conditions.

Product of Task 6

A technical memorandum documenting the project

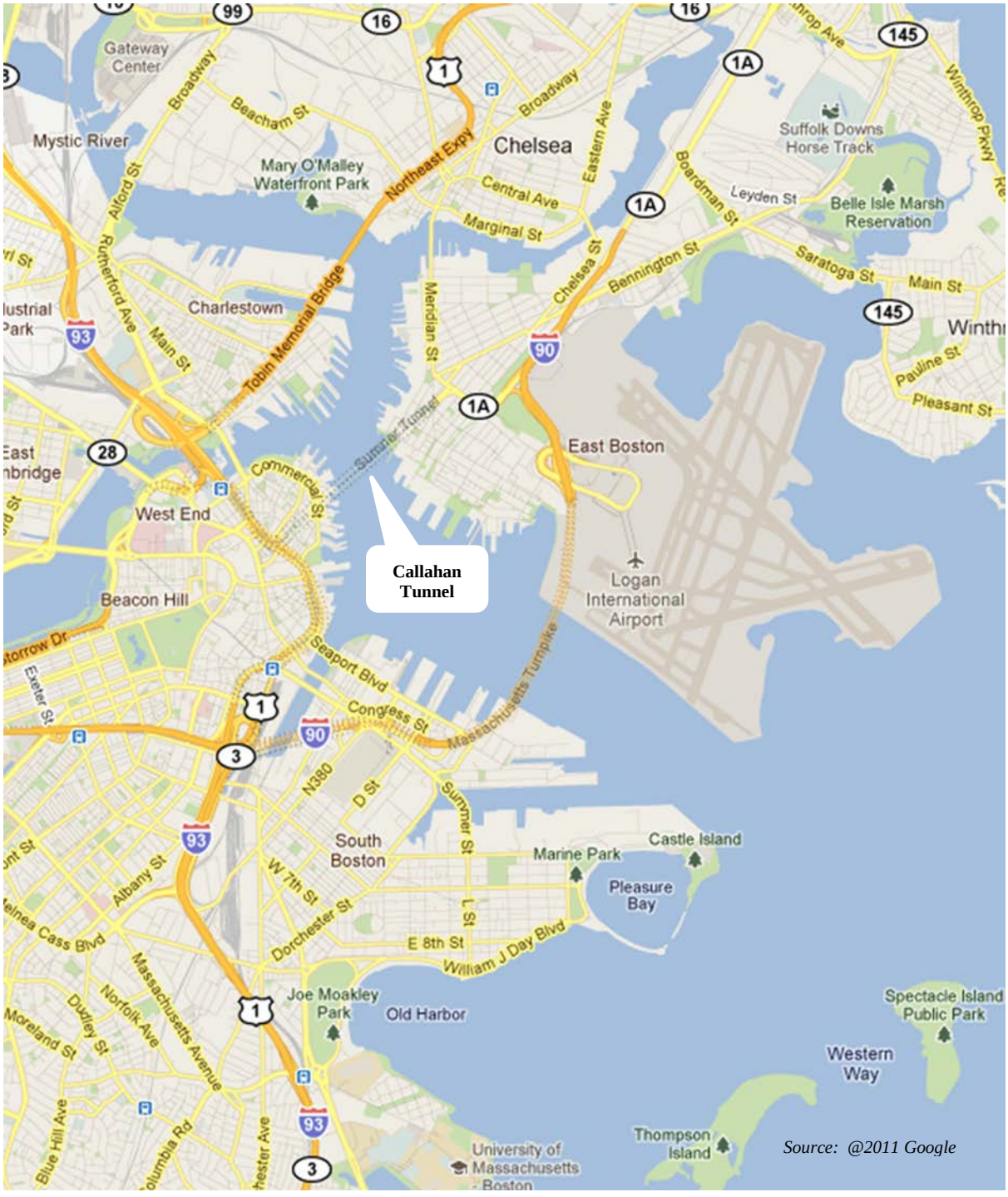
ESTIMATED SCHEDULE

It is estimated that this project will be completed three months after the notice to proceed is received. The proposed schedule, by task, is shown in Exhibit 2.

ESTIMATED COST

The total cost of this project is estimated to be $25,782. This includes the cost of 11.5 person-weeks of staff time and overhead at the rate of 94.57 percent. A detailed breakdown of estimated costs is presented in Exhibit 3.

KQ/JL/YB/jl



CTPS

Exhibit 1
Project Study Area

Callahan Tunnel Construction Impact Study

Exhibit 2
ESTIMATED SCHEDULE
Callahan Tunnel Construction Impact Study

Task	Month 1	2	3
1. Calibrate Base-Year (2009) Model			
2. Investigate the Impacts on Access to Logan Airport			
3. Analyze the Impacts on Surrounding Roadways			
4. Develop and Analyze Alternatives			
5. Coordinate with Project Team and Provide Ongoing Technical Assistance			
6. Produce Technical Memorandum			A

Products/Milestones

A: Technical memorandumm with tabular and graphical summaries of the results

Exhibit 3
ESTIMATED COST
Callahan Tunnel Construction Impact Study

Direct Salary and Overhead	$25,782

Task	Person-Weeks M-1	P-5	P-4	P-3	Total	Direct Salary	Overhead (@ 94.57%)	Total Cost
1. Calibrate Base-Year (2009) Model	0.1	0.0	0.3	1.0	1.4	$1,555	$1,471	$3,026
2. Investigate the Impacts on Access to Logan Airport	0.1	0.3	0.0	1.0	1.4	$1,678	$1,587	$3,265
3. Analyze the Impacts on Surrounding Roadways	0.2	0.0	0.0	1.8	2.0	$2,171	$2,053	$4,224
4. Develop and Analyze Alternatives	0.4	0.0	1.5	2.6	4.5	$5,157	$4,877	$10,035
5. Coordinate with Project Team and Provide Ongoing Technical Assistance	0.2	0.0	0.0	0.5	0.7	$841	$796	$1,637
6. Produce Technical Memorandum	0.5	0.0	0.0	1.0	1.5	$1,848	$1,748	$3,595
Total	1.5	0.3	1.8	7.9	11.5	$13,251	$12,531	$25,782

Other Direct Costs	$0

TOTAL COST	$25,782

Funding
MassDOT Contract TBD